General Instructions for completing online CSEP applications via the UK Chapter Website

Please answer all questions on the form. In some cases, you will not be able to continue without completing certain information.

You can save your application part-way through if you are unable to complete it in a single session. When you next log on, information will be available for you to continue where you left off.

It is possible to review, save and print your application after you sign the declaration and before you proceed to the payment page. **Please do this if you wish to retain a copy for your records**.

Following submission, all candidates for ASEP and CSEP have a period of one year to complete the process.

General Information

This section addresses personal details including contact information.

Some parts of this section may be completed automatically by the INCOSE UK Chapter member database. If the information is incomplete, please correct this via your membership profile on the INCOSE UK website.

"CSEP Exam First" or "CSEP Review First". Applicants have the option of taking the knowledge examination before their experience is assessed and verified as acceptable by INCOSE, or vice versa. There are no other differences. For those individuals who feel ready to take the knowledge examination, or who are unsure whether their experience will meet the full requirement for CSEP, the "Exam First" option may be the most appropriate option. Of course, another alternative would be to apply for ASEP, and having passed that examination, upgrade to CSEP at a later point.

Education

This section asks about your educational background.

Depending on your educational background, you may be required to submit evidence (and reference validation) for a minimum of either 5, 10 or 15 years of experience as follows:

a.   If you have a "Technical Bachelor's degree" – 5 years of SE experience should be recorded.

b.   If you have a Bachelor's Degree but one which is non-technical in nature – 10 years of experience of which at least 5 years should be Systems Engineering and at least 5 further years which should be either Systems Engineering or general engineering, should be recorded.

c.   If you do not have a Bachelor's degree – 15 years of experience of which at least 5 years should be Systems Engineering and at least 10 further years of either Systems Engineering or general engineering should be recorded.

Degree Definitions

Note: INCOSE is the final authority on degree applicability.

Technical Bachelor's degrees include BSc or BEng (or international equivalents through such mechanisms as the Washington Accord or the Bologna Agreement) in engineering or other technical fields. Acceptable engineering fields include: aeronautics, biomedical, chemical, civil, computer, electrical, environmental, mechanical, nuclear, software, systems. Acceptable other fields of study include: chemistry, computer science, mathematics and physics.

If the Bachelor's degree does not come from the above fields, then a Masters or Doctorate degree (or international equivalent) in those fields is acceptable.

The acceptability of other degrees outside this guideline is subject to the decision of the Certification Program Office. For more information on this or if you are unclear on the suitability of your qualification, please contact Lynn Davis at profdev@incose.org or on 01460 298217.

As part of your application you will be prompted to upload PDF scans of your certificate(s) for any degrees you claim. **Please check that these have uploaded successfully before submitting your application as no processing can begin until your submission is complete.**

NOTE: It is possible that under some circumstances, you may be required to submit additional evidence concerning the content or status of your degree. If this is the case you will be asked to do this separately, after you have applied.

Documenting your Experience using the online system

This section is the place where you capture your experience for any positions which you feel are relevant for your certification application. You will be required to document the pre- requisite 5, 10 or 15 years of experience defined by your educational qualification level entered in the previous stage.

If you have more experience than the minimum required, it is advisable to document more than the bare minimum if you are able. This provides a "cushion" for you, should INCOSE UK reviewers determine that your experience in one or more areas is (for whatever reason) not validated.

You will initially be prompted to enter details of your current position (P1) and as you complete your data for this, you will then be asked to continue with any previous positions (in reverse chronological order).

A "Position" is up to you to decide. For instance, you may identify employment periods at different organisations, or significant changes of responsibilities within the same organisation. You should try not to differentiate between different projects or various placements within the same organisation unless there was a significant change in responsibility. Please note that you can document up to ten positions as part of your CSEP application, and each position will require one or more references to be fully validated, so this may be a factor in how you choose to identify "Positions".

NOTE: Time in university as a student does not count as experience.

If you were working on multiple projects concurrently, your overall months claimed across all concurrent projects cannot exceed the duration of the time in that role. You should "divide your time" across such projects as appropriate.

> **Example:** total you can claim for all three projects added together is 12 months. You might decide to claim 4 months for all three projects (12 months total) or 6, 3 and 3 months (12 months total) across the projects – or whatever reflect the nature of your experience. Your references will be asked to validate the 12-month period or subsets/projects with which they are familiar with your work.

Experience Breakdown

In this section, you are required to provide a detailed description of the specific systems engineering tasks you performed or contributed to, in the technical area(s) below.

- Requirements Engineering

- Systems and Decision Analysis

- Architecture/Design Development

- Systems Integration

- Verification, and Validation

- System Operation and Maintenance

- Technical Planning

- Technical Monitoring and Control

- Acquisition and Supply

- Information and Configuration Management

- Risk and Opportunity Management

- Lifecycle Process Definition and Management

- Specialty Engineering

- Organizational Project Enabling Activities

- Other.

These areas are further elaborated in Annex A of this document.

To enter experience, you select a technical area from the complete list of SE technical areas, and document the tasks you performed in the selected technical area for the current position you are documenting. You will also need to indicate the duration you were performing tasks in that technical area.

Describe the sub-level activities performed in each SE functional areas, for instance what parts of "Requirements Engineering" were done – requirements elicitation, definition, decomposition,

allocation, control, management, as appropriate and/or the products or services for which SE was applied.

NOTE: If you choose to document part of your experience using the "Other" category, please ensure the claimed experience relates to systems engineering. You will also have to justify why you believe this "other" experience should be counted as "systems engineering" experience and why it does not fit in into the "standard" categories.

INCOSE UK is interested only in what you as an individual did (i.e. not what the project or the team achieved). Be specific and identify your personal contribution and/or responsibilities. It is too vague to just state "I worked on requirements for the system."

Describe your experience in more detail than just saying that you were involved with an effort, led an effort, or contributed to an effort. Simply stating a job title or position is not a description of experience. Non-technical roles/tasks in program management, resource management and business development are not SE functions and are unlikely to count as the experience desired.

The INCOSE UK Certification Application Review team makes assessments based on the information provided in the application and is looking for your direct contribution to a work effort.

Determining Duration – Common Questions

1. If you performed multiple distinct tasks in a single technical area in a single position, (e.g. spread out over a long time, with gaps between tasks) you should identify only the number of months you were doing the specific tasks, not the elapsed time on the project.

    Example: In Position P1 (which you held for 12 months) you performed several requirements engineering activities: you wrote a short system specification (which took 3 months), you then moved onto to the integration team elsewhere on the project (for 1 month) and then returned to the requirements team on the same project to support requirements work for a further 2 months. You should claim just 3 +2 months = 5 months of Requirements Engineering work (i.e. not 6 months) and 1 month for Systems Integration (which will be documented in a separate experience entry for P1)

2. The total amount of SE experience claimed for a single position cannot exceed time spent in that position.

    Example: Assume you worked in 4 different SE technical areas over a 7-year period and the total of all your SE experience amounted to 5 years. The summary table may reflect up to your equivalent full-time experience, such as: Requirements Engineering for 18 months; Systems Integration for 15 months; Information and Configuration Management for 15 months; and Technical Planning for 12 months; thus equalling 60 months of SE experience for the 7-year period.

3. If you performed SE work on the same position in several SE technical areas simultaneously over a period, determine the proportion of time you spent (approximately) in each area and then allocate this proportion of the total duration to the area in question. The smallest permitted granularity permitted is 1 month, so some approximation may be required, but please ensure that the total across all claimed areas does not exceed the total duration claimed for the position.

Example: Assume you worked full-time in 3 different SE technical areas on the same project (P1) in a 2-year period. This equates to 24 months of SE activities, which needs to be divided across the three areas. After some thought, you decide that you spent approximately 50% of your time performing Requirements Engineering, 20% Systems integration and 30% Technical Monitoring and Control. For P1, you should claim 50% of your 24 months (i.e. 12 months) for Requirements Engineering; 20% of your 24 months (i.e. 5 months - approximately) for Systems Integration and 30% (i.e. 7 months - approximately) for Technical Monitoring and Control, thus equalling 24 months of SE experience for position P1.

Demonstrating "Breadth" and "Depth" of SE Experience

To become accredited, applicants are required to demonstrate both **breadth** and **depth** of Systems Engineering experience.

To ensure this is the case, applicants will be required to document across all positions they list on their application form **at least 12 months of experience in at least three of the 15 systems engineering technical areas listed above**.

Other distributions of "breadth" and "depth" may be submitted, however, the acceptability of experience distributions outside the above guidelines is subject to the decision of the review team.

Summary Table: Checking "Breadth" and "Depth" of SE Experience

To support applicants in calculating breadth and depth, the online system automatically generates a summary table and calculates totals for all positions and experiences currently documented, so applicants can see whether or not they comply with breadth and depth requirements.

References

The applicant's experience, confirmed by their references, must cover the entire period of Systems Engineering experience (and additional general engineering experience, if applicable) needed by the applicant to qualify for certification.

Each individual reference does not have to confirm the entire period of the applicant's experience, but the collective set of references must support the entire period of the applicant's required experience, including both depth and breadth of experience requirements.

It is your responsibility to select at least three appropriate references in accordance with the guidelines provided below.

Please ensure, before applying, that all references are happy to complete their recommendation via an on-line link which will be provided as part of the application process. A description of their own background and experience will be required as part of the process – you should outline this to them when requesting their support.

The applicant is responsible for following up with his/her references to ensure that they have submitted their online recommendations in a timely manner.

NOTE: It may be necessary for the Certification Administrator to contact references directly as part of the INCOSE UK review process. Please check with your references <u>before</u> using them to make sure that they are happy for this to occur, should the need arise.

<u>Guidance for Selecting References</u>

To be deemed "qualified", each reference is required to submit information describing their own work experience, knowledge, leadership, and contributions to systems engineering.

A qualified reference is an associate, fellow worker, supervisor or similar (e.g. someone who knows of your work in systems engineering for the period in question) who is of equal or higher level in knowledge, experience, qualifications or competence in "systems engineering" so that they can competently attest what you have claimed on your application form.

A reference should:
- Have personal knowledge of applicant's professional reputation and accomplishments.
- Be acquainted with your work (experience), knowledge, leadership, and contributions to systems engineering for the period they have been asked to be a reference.
- Not be related to the applicant by blood or marriage.

    Examples of possible references include:
- Supervisors for whom you work and/or who provide your systems engineering performance rating
- Program Managers/Task Leaders for whom you work and/or who provide input for your systems engineering performance rating
- Customers with whom you had direct technical contact regarding systems engineering activities
- Peers aware of the systems engineering activities you performed

At least one reference should be a current or former supervisor.

Depending on your academic qualifications, we may require additional references to endorse additional general engineering experience due to your educational situation. These additional references need to be similarly qualified and able to attest to the applicant's general engineering knowledge and past experience in successfully performing general engineering tasks.

When you have provided all mandatory information, and your application payment has been taken, the online system will automatically provide you with an online link for each of your identified references which should be used by them to complete their reference for you.

If a reference is unable to use the online system, they should contact the INCOSE UK Chapter Certification Administration office for further instructions.

NOTE: Failure of references to complete their reference in the time provided may invalidate your application and it is the responsibility of the candidate to ensure timely submissions.

Application Processing

Your application will only be processed when forms and evidence have been received and are complete. This includes:

a. Application form completed as required
b. All supporting documentation provided (e.g. educational certificates)

Applications are usually checked within two weeks of receipt. If your application is incomplete, it will be returned to you to make the relevant additions.

Formal review of your application will only begin when all references have been received. If you elected to go 'exam first', formal review will not start until you have passed the certification examination as well.

You will be notified by certification administration when the formal review process begins.

If the application is incomplete or one of your items is missing, you will be notified of any corrective actions you must take by the certification administrator.

If you are requested to submit additional information, you will have one month from the time of notification to provide this additional information. Failure to do so may result in your application for Certification being denied and your fees will not be refunded

The Certification Examination

Within the one year following application submission, candidates for ASEP and CSEP accreditation levels are required to pass a separately-administered knowledge examination. Candidates may only take this exam after their application (whether exam first or review first) has been checked and deemed complete, at which point an exam eligibility code will be provided.

Applicants select the exam location and time and pay the exam fee separately to the testing organisation each time the exam is scheduled.

Candidates will only be authorised to take the exam three times within one year of the submittal of an application. If they fail all three times, their application will be denied.

Successful Applicants

Successful applicants will be recognised as INCOSE Systems Engineering Professionals, and your name along with your organisation and country will be posted on the INCOSE public website and may be otherwise communicated by INCOSE.

A metal badge/pin and certificate will be sent to you from INCOSE UK to the address designated in your membership details.

Applicants are not allowed to claim or use the notation of INCOSE Systems Engineering Professional (SEP) until they have been notified by INCOSE UK that they have successfully completed the entire certification process (e.g. not by only passing the certification exam).

Becoming a Certified Application Reviewer (CAR)

If you are interested in being considered to become part of Certification Application Review team after you become a Certified Systems Engineering Professional (CSEP), be sure to include a minimum of 20 years of engineering experience and at least 10 years of SE experience in your certification application.

No additional reference confirmations (beyond that required for the entire period of experience needed by the applicant to qualify for Certification) are required for CAR consideration.

The minimum qualifications for Certification Application Reviewers (CARs) are

a.   To be a current Certified Systems Engineering Professional (CSEP).

b.   To be an INCOSE member.

c.   To have a minimum of 20 years of engineering experience, and have at least 10 years of systems engineering experience.

CAR participation is by invitation only based on the above requirements and other factors. Further information on CARs is available from the INCOSE UK Professional Development Co-ordinator at profdev@incose.org

ANNEX A: Systems Engineering Technical Areas: Experience Applicable for Certification

This section provides additional definition of typical activities contained in each of the identified 15 identified Systems Engineering technical areas.

1. Requirements Engineering

Key SE Activities (as defined in the INCOSE SE Handbook, V4)	Example tasks (derived from INCOSE SE Handbook)
Preparing for Business or mission analysis	e.g. Establishing an organisational strategy
Defining the Problem or opportunity space	e.g. Reviewing gaps in organizational strategy regarding desired organisational goals; Analysing gaps across trade space; Describing problems or opportunities underlying the gaps; Obtaining agreement
Characterising the solution space	e.g. Nominating key stakeholders; Defining preliminary OpsCon; Defining preliminary lifecycle concepts
Evaluating Alternative solution classes	e.g. Modelling, simulating, determining feasibility and selecting solution classes; Validating in context of business or mission strategy e.g. feasibility, market feedback
Managing the business or mission analysis	e.g. Establishing and maintaining traceability; Providing baseline for Configuration Management, developing organisational competence and/or associated tools in this area
Preparing for Stakeholder Needs & Requirements Definitions	e.g. Determining stakeholder (classes); Determining who will participate and capture in ConOps
Defining stakeholder needs	e.g. Eliciting from identified stakeholders; Prioritizing stakeholders; Specifying the stakeholder needs
Developing Operational Concept and other Life Cycle concepts	e.g. Identifying scenarios, capabilities, behaviours and system responses reflecting lifecycle usage, operational environment identifying interfaces
Transforming needs into stakeholder requirements	e.g. Identifying solution constraints (e.g. legacy); Specifying health, safety, security, environment, assurance relating to critical qualities; Specifying stakeholder requirements consistent with scenarios and critical qualities
Analysing Stakeholder Requirements	e.g. Defining validation criteria for requirements (e.g. (MoE, MoP); Analysing for quality, clarity, completeness and consistency; Reviewing with stakeholders; Negotiating unreasonable requirements
Managing stakeholder needs and requirements definition	e.g. Establishing with stakeholders' requirements are expressed correctly; Recording in a manner suitable for maintenance; Establishing and maintaining traceability; Providing baseline information for Configuration Management
Preparing for System Requirements Definition	e.g. Establishing approach (methods, enabling systems, Requirements Management Plan) in conjunction with architectural design determining system boundary, and its interfaces- reflecting system behaviours and operational scenarios; Identifying interaction with external systems, negotiated in ICDs
Defining System Requirements	e.g. Identifying required implementation-independent system functions including design factors that facilitate efficient lifecycle factors and system behaviour; identifying and capturing unavoidable (stakeholder) constraints or limitations;

Key SE Activities (as defined in the INCOSE SE Handbook, V4)	Example tasks (derived from INCOSE SE Handbook)
	identifying critical quality characteristics (safety, security, reliability, supportability); identifying technical risks)
Analysing System Requirements	e.g. Analysing the integrity of the requirements individually and as a set; Providing analysis results to stakeholders to ensure requirements adequately reflect stakeholder requirements; Negotiating modifications to resolve issues identified; Defining verification criteria, including MOPs, TPMs reflecting MOEs and MOSs
Managing System Requirements	e.g. Ensuring agreement among stakeholders that requirements reflect intentions; Establishing and maintaining traceability and control between requirements and relevant elements of the system definition and maintaining throughout the life cycle; Requirements allocation; Providing baseline information for configuration management; Developing organisational competence and/or associated tools in this area

2. Systems and Decision Analysis

Key SE Activities (as defined in the INCOSE SE Handbook, V4)	Example tasks (derived from the INCOSE SE Handbook)
Preparing for system analysis	e.g. Defining analysis scope, evaluation criteria, analysis strategy and methods; Defining and acquiring enabling systems
Performing System Analysis	e.g. Collecting/Modelling, analysing and peer reviewing analysis data
Managing System Analysis	e.g. Baselining and maintaining analysis history data, developing organisational competence and/or associated tools in this area
Preparing for System Engineering Decisions	e.g. Defining a strategy for the system; Establishing and challenging the decision-making statement; Clarifying terminology (e.g. buying a car...What car? What vehicle?)
Analysing the system engineering decision information	e.g. Framing, Tailoring and structuring the decision; Developing Objectives and Measures; Generating Creative Alternatives; Assessing alternatives via deterministic analysis; Synthesizing Results; Identifying Uncertainty and Conducting probabilistic analysis (if reqd.); Assessing impact of uncertainty; Improving alternatives; Communicating trade-offs; Presenting recommendation & Implementation plan
Making and managing SE decisions	e.g. Recording the decision and associated data; Communicating new directions from the decision

3. Architecture / Design Development

Key SE Activities (as defined in the INCOSE SE Handbook, V4)	Example tasks (derived from the INCOSE SE Handbook)
Preparing for architecture definition	e.g. Identifying market; Stakeholders and their concerns; Analysing system requirements; Tagging key non-functional requirements; Defining approach and evaluation criteria; Ensuring enabling system elements are available
Developing architecture viewpoints	e.g. Taking stakeholder concerns and establishing models to facilitate understanding and viewpoints
Developing models and views of candidate architectures	e.g. Applying supporting techniques; Defining Context, Defining External interactions; Defining architectural entities; Defining Attributes; Defining Candidate architecture
Relating Architecture to design	e.g. identifying notional system elements partitioning - reflecting requirements; Optimising; Allocating requirements to elements; Defining/refining internal interfaces; Mapping design characteristics; Identifying Induced requirements
Assessing candidate architectures	e.g. Using evaluation criteria, planning, performing and documenting trade studies, selecting preferred architecture
Managing the Selected Architecture	e.g. Documenting: Capturing decisions and rationale; Maintaining evolving architecture; Establishing architectural governance; Coordinating architectural review to obtain stakeholder agreement vs. requirements
Preparing for design definition	e.g. Identifying and planning technology obsolescence or upgrade; Identifying design characteristics for each system element; Evolving design with architecture; Defining design strategy, including requirements for enabling systems
Assessing alternatives for obtaining system elements	e.g. Identifying existing elements and assessing options using selection criteria from design characteristics; Selecting best alternatives; Designing or Acquiring Elements
Establishing design characteristics and design enablers	e.g. Establishing design characteristics and design enablers related to each system element; Performing requirements allocation for requirements and elements not fully addressed in architecture; Defining design characteristics for architectural entities and assessing alternative designs or trades; Performing interface definition for interfaces not defined in the architectural definition process or which need refining as the design evolves; Capturing design characteristics for system elements; Providing rationale on selection of major elements
Managing the system design	e.g. Capturing and maintaining decisions and rationale; Managing the maintenance and evolution of design and alignment architecture, developing organisational competence and/or associated tools in this area

4. Systems Integration

Key SE Activities (as defined in the INCOSE SE Handbook, V4)	Example tasks (derived from the INCOSE SE Handbook)
Preparing, Performing and Managing system element implementation	e.g. Professional-level activities in the area of systems engineering in support of preparation for the implementation of a system or product, or supporting and managing the implementation of a system or product
Preparing for Integration	e.g. Defining/Preparing a Strategy, Developing Integration Plans, Defining Constraints and Enabling Systems; Developing test scenarios and associated test scripts
Performing Integration	e.g. Assembling incremental aggregates; Using ICDs and enabling systems; Conducting and documenting integration tests; Verifying architecture and design
Managing integration results	e.g. Recording results, recording anomalies and establishing traceability; Tracking test results and retest status; Co-ordination with PM, developing organisational competence and/or associated tools in this area
Identifying, Agreeing and Managing interfaces	e.g. defining, optimising and agreeing Functional and Physical aspects of interfaces; negotiating interface ownership, functionality and performance with suppliers and partners; managing interface design and development lifecycle, developing organisational competence and/or associated tools in this area

5. Verification and Validation

Key SE Activities (as defined in the INCOSE SE Handbook, V4)	Example tasks (derived from the INCOSE SE Handbook)
Preparing for Verification	e.g. Preparing a Strategy and Scope; Developing Verification Plans; Identifying pass/fail criteria; Writing procedures; Defining a schedule; Defining Enabling Systems
Performing Verification	e.g. Implementing Verification testing; Analysing results
Managing results of Verification	e.g. Preparing/Maintaining RVTM; Recording results; Recording/resolving anomalies; establishing bidirectional traceability; Baselining for CM; Coordinating/Updating strategy with PM, developing organisational competence and/or associated tools in this area
Preparing for Validation	e.g. Identifying/Involving Stakeholders; Defining a Validation strategy and constraints, Developing Validation Plans; Identifying pass/fail criteria; Writing procedures; Identifying Risks; Identifying/Acquiring Enabling systems; Providing V&V evidence in support of V&V, Qualification and Certification
Performing Validation	e.g. Developing procedures and Schedule; Executing procedures; Analysing results; Recording anomalies and tracking updates; Achieving Validation and Qualification
Managing results of Validation	e.g. Preparing/Maintaining RVTM; Recording results; Recording/resolving anomalies maintaining bidirectional traceability; Baselining for CM; Obtaining stakeholder acceptance, Obtaining Qualification and Certification certificates, developing organisational competence and/or associated tools in this area
Preparing for the Transition	e.g. Defining a Strategy; Defining logistics; Defining installation procedures; Defining/Acquiring enabling systems
Performing the Transition	e.g. Installing a system, training users, confirming system provides functionality (Supporting "Acceptance")
Managing results of Transition	e.g. Capturing incident s, capturing problems and anomalies; Maintaining traceability; Baselining information for CM, including developing organisational competence and/or associated tools in this area

6. System Operation and Maintenance

Key SE Activities (as defined in the INCOSE SE Handbook, V4)	Example tasks (derived from the INCOSE SE Handbook)
Preparing for Operation	e.g. Defining a Strategy; Performing system safety training; Feeding back operational constraints into design, identifying/Acquiring enabling systems; Identifying operator skillsets and training
Managing results of Operation	e.g. Recording activities in accordance with OpsCon; Professional activities associated with documenting, recording and resolving operational anomalies; Maintaining traceability, developing organisational competence and/or associated tools in this area
Performing and Supporting System/Product Operation	e.g. Professional activities associated with operating and supporting system/product operation such as Tracking performance, availability, non-compliances
Preparing for Maintenance	e.g. Defining a Strategy and Constraints, Defining Maintenance Types levels; Defining/Acquiring enabling systems and training personnel
Performing Maintenance	e.g. Professional activities associated with Writing/Executing Procedures, identifying/resolving anomalies; restoring operation after failure, performing corrective actions, performing preventative/perfective maintenance
Performing Logistics Support	e.g. Professional activities associated with support; Developing organisational competence and/or associated tools in this area
Managing results of maintenance and logistics	e.g. Professional activities associated with documenting, recording/ resolving anomalies/trends, maintaining traceability, obtaining Customer feedback
Preparing for disposal	e.g. Defining a Strategy and Constraints, Defining/Acquiring Enabling systems; Defining reuse/recycling of hazardous materials; Defining special containment processes
Performing the disposal	e.g. Professional activities associated with Decommissioning, Disassembling; Removing waste and consigning for destruction/ storage; Developing organisational competence and/or associated tools in this area
Finalizing the disposal	e.g. Professional activities associated with assessment of decommission (e.g. adverse affects); Professional activities associated with maintaining documentation (e.g. for residual hazards)

7. Technical Planning

Key SE Activities (as defined in the INCOSE SE Handbook, V4)	Example tasks (derived from the INCOSE SE Handbook)
Defining the SE project	e.g. Analysing proposals and agreements to define objectives, scope and constraints; Establishing project strategy and tailoring required; Establishing SE Work Breakdown Structure (WBS) based upon (evolving) architecture; Defining system life cycle model (from those defined organizationally), including SE milestone s, gates and reviews
Planning the SE project and SE technical management and Activating the project	e.g. Tailoring enterprise processes for program/project use; Establishing SE roles and responsibilities; Defining top-level SE work packages; Developing SE project schedule; Defining required SE infrastructure & services; Defining SE costs and estimate budget; Planning usage of personnel and facilities and the acquisition of materials, goods and enabling systems; Preparing System Engineering Management Plan (SEMP) or Systems Engineering Plan (SEP) and Integrated Master schedules, Tailoring plans (e.g. QM, CM, RM and **IM,** Measurement) to reflect project SE; Establishing criteria for SE milestones, gates and internal reviews, Establishing project performance measures, developing organisational competence and/or associated tools in this area; activating the project
Identifying and recording tailoring influences and mandated structures	e.g. Identifying tailoring criteria for each stage; Establishing criteria which determine the process level that applies to each stage; Taking due account of the lifecycle structures recommended or mandated by standards
Obtaining input from parties affected by the tailoring strategy	e.g. Determining process relevance to cost, schedule and risks, system integrity, Determining Quality of documentation needed; Determining extent of review, Defining coordination and decision methods
Making Tailoring decisions and Selecting life cycle processes	e.g. Making tailoring decisions, determining processes that require tailoring - including any changes required to meet organisation or project needs beyond tailoring (e.g. additional tasks)

8. Technical Monitoring and Control

Key SE Activities (as defined in the INCOSE SE Handbook, V4)	Example tasks (derived from the INCOSE SE Handbook)
Planning for SE project assessment and control	e.g. Developing an SE strategy for project assessment and control
Assessing SE projects	e.g. Reviewing measurement results for the project; Determining actual and predicted cost/time and deviations in project quality; Evaluating system performance, effectiveness and efficiency of activities; Ensuring SE resource adequacy and availability; Evaluating SE progress against milestones; Conducting system reviews, audits, inspections to determine readiness for next milestone; Monitoring SE critical tasks and technologies; Analysing assessment results; Making recommendations for SE plan changes and other decision making processes; Communicating SE status
Controlling projects from SE perspective	e.g. Initiating preventative actions for adverse trends; Problem resolution for non-conformances; Corrective actions for deviations from plans; Reflecting changes in new SE work items or schedule; Negotiating with external suppliers for good and services; Making decisions to proceed or not at gate/ milestone events, developing organisational competence and/or associated tools in this area
Preparing for Measurement	e.g. Identifying measurement stakeholders and their needs; Developing a measurement strategy; Selecting relevant prioritized measures that aid with management and technical performance; Defining base measures, derived measures, indicators, data collection methods, frequency, repository, reporting methods, trigger points and review authorities
Performing System Measurement	e.g. Gathering, processing, storing, verifying and analysing metrics and SE data to obtain measurement results (information products) and key performance parameters; conducting capability assessments; Documenting and reviewing with stakeholders; Recommending action if required, developing organisational competence and/or associated tools in this area
Preparing for system quality assurance	e.g. Establishing and maintaining QA strategy (in QA Plan or within SEMP); Establishing and maintain guidelines policies, standards and procedures, assessing process and tool usage compliance; Defining SE/QA responsibilities and authorities
Performing system product or service evaluations	e.g. Performing Quality Audits and product evaluations at appropriate times in the life cycle and defined in QA plan, reporting quality audits, defining and tracking improvement recommendations; Ensuring V&V of process outputs; Recommending process improvements; Ensuring QA perspective is represented during development activities, developing organisational competence and/or associated tools in this area, Evaluating product verification results as evidence of QA effectiveness

9. Acquisition and Supply

Key SE Activities (as defined in the INCOSE SE Handbook, V4)	Example tasks (derived from the INCOSE SE Handbook)
Preparing for system/element acquisition	e.g. Developing plans, policies to meet strategic goals; Identifying needs (e.g. in Request for Proposal (RFP) or Request for Quotation (RFQ)); Identifying potential suppliers, developing organisational competence and/or associated tools in this area
Advertising the acquisition and select the supplier	e.g. Distributing the request (e.g. RPF, RFQ); Selecting appropriate suppliers using selection criteria and preferences; Evaluating supplier responses; Understanding PM and QM perspectives; Recording recommendations; Selecting preferred supplier
Establishing and maintaining an agreement	e.g. Negotiating agreement including acceptance criteria
Monitoring the agreement	e.g. Managing acquisition process (e.g. Relationships, supplier Interactions); Ensuring final authority approvals for deliveries accepted from supplier; Maintaining communications; Reporting Status progress against schedule; Amending Agreements
Accepting the product or service	e.g. Complying with agreement and laws; Rendering payment (or other considerations); Accepting responsibility; Performing final review and lessons learned
Preparing for the supply	e.g. Develop strategy, policies etc. to meet needs of potential acquirers; Identifying opportunities, developing organisational competence and/or associated tools in this area
Responding to a tender	e.g. Selecting appropriate acquirers; Evaluating acquirer requests and Proposing solution meeting needs; Assessing suitability from PPM, HR, QM and BMA perspectives
Establishing and maintaining an agreement	e.g. Establishing acceptance criteria; Committing to agreed requirements, milestones, payments
Executing the agreement	e.g. Starting the project; Managing the supply process (Decision making, relationship building, interaction with organizations, defining responsibilities, approval authorities); Maintaining communications; Evaluating agreement (e.g. risks and issues)
Delivering and supporting the product or service	e.g. After acceptance and transfer of final product/service accept payment from acquirer; When supply cycle concludes, performing final review to extract lessons learned

10. Information and Configuration Management

Key SE Activities (as defined in the INCOSE SE Handbook, V4)	Example tasks (derived from the INCOSE SE Handbook)
Planning configuration management	e.g. Creating a CM strategy (plan in CM/SEMP Plan); Implementing a configuration control cycle for ECRs (evaluation, approval, validation, verification, developing organisational competence and/or associated tools in this area
Performing configuration identification	e.g. Identifying Configuration Items (CIs); System elements and information items to be maintained under CM; Establishing unique CI identifiers; Establishing baselines for CIs at agreed points in the life cycle; Gaining agreement of baselines from acquirer/suppliers
Performing configuration change management	e.g. Controlling life cycle baseline changes; Participating in Change Control Boards, Identifying, recording, reviewing, approving, tracking and processing requests for change and requests for variance (deviations)
Performing configuration status accounting	e.g. Developing and maintaining configuration control documentation and CM data; Maintaining traceability of configurations; Communicating status of controlled items
Performing configuration evaluation	e.g. Performing configuration audits and CM surveillance reviews for milestones and decision gates to validate baselines, Participation in Functional and Physical Configuration Audits
Performing release control	e.g. Performing prioritization, tracking, scheduling and closing of changes and documentation; Maintaining traceability
Preparing for information management	e.g. Creating Information Management Strategy and associated IM Plan; Supporting establishment of data dictionary; Defining system-relevant information, storage requirements, access and duration for maintenance; Defining formats and media for transmission, retention, retrieval e.g. documents, database, web-based mechanisms; Identifying valid sources of information; Identifying responsibilities for origination, capture, archive, disposal (in accordance with. CM process), developing organisational competence and/or associated tools in this area
Performing information management	e.g. Periodically obtaining/transforming artefacts; Maintaining information according to integrity, security and privacy requirements; Retrieving and distributing information in appropriate form as required; Archiving designated information complying with legal audit and knowledge retention requirements; Disposing of unwanted, invalid or unverifiable information, reflecting security and privacy requirements

11. Risk and Opportunity Management

Key SE Activities (as defined in the INCOSE SE Handbook, V4)	Example tasks (derived from the INCOSE SE Handbook)
Planning (technical) risk management	e.g. Defining and documenting Risk and Opportunity strategy and/or plans, developing organisational competence and/or associated tools in this area
Managing the (technical) risk profile	e.g. Establishing and maintaining a risk profile to include: context, probability, consequence, risk thresholds, priority, actions and status of treatment; Defining and documenting risk thresholds, acceptable/unacceptable risk conditions; Periodically communicating with stakeholders
Analysing risks	e.g. Defining risk situations and identifying risks and opportunities; Analysing for likelihood, consequence and determine magnitude and priority; Defining a treatment scheme and resources for each risk including responsible person
Treating risks	e.g. Using criteria, considering alternative treatments; Generating a plan of action when risk exceeds acceptable levels
Monitoring risks	e.g. Maintaining a record of risks and treatments and tracking reduction and opportunity realisation; Maintaining transparent communication

12. Lifecycle Process Definition and Management

Key SE Activities (as defined in the INCOSE SE Handbook, V4)	Example tasks (derived from the INCOSE SE Handbook)
Establishing the Process	e.g. Identifying sources of life cycle model information (e .g. enterprise, corporate , industry); Distilling information to create appropriate set of life cycle models for the organization; Establishing guidelines for life cycle model management (plans, policies etc.) and tailoring; Defining, integrating and communicating life cycle models and roles, responsibilities authorities and performance criteria; Using business achievements to establish entry and exit criteria for decision gates; Disseminating life cycle policies etc. throughout the organisation; Defining enterprise processes and best practices
Assessing the Process	e.g. Using assessment and reviews of life cycle models to determine their adequacy; Identifying opportunities to improve; Using lessons learned as source of improvement
Improving the Process	e.g. Using assessment and reviews of life cycle models to determine their adequacy; Identifying opportunities to improve; Using lessons learned as source of improvement, developing organisational competence and/or associated tools in this area.

13. Specialty Engineering

Key SE Activities (as defined in the INCOSE SE Handbook, V4)	Example tasks (derived from the INCOSE SE Handbook)
Performing professional-level Speciality Engineering activities	e.g. Working in any of the following speciality engineering areas as defined in the INCOSE SE handbook (e.g. Affordability/Cost-Effectiveness/LCC Analysis; Electromagnetic Compatibility; Environmental/ Impact Analysis; Interoperability Analysis; Logistics Engineering; Manufacturing and Produceability Engineering; Mass Properties Engineering; Reliability, Maintainability, Availability; Resilience Engineering; System Safety Engineering; System Security Engineering; Training Needs Analysis; Usability Analysis (Human Systems Integration); Value Engineering

14. Organizational Project Enabling Activities

Key SE Activities (as defined in the INCOSE SE Handbook, V4)	Example tasks (derived from the INCOSE SE Handbook)
Establishing the Infrastructure	e.g. Gathering and negotiating resource needs with organization and projects; Establishing the infrastructure resources and services to ensure organization goals and objectives are met; Managing resource and service conflicts and shortfalls with steps for resolution
Maintaining the Infrastructure	e.g. Managing infrastructure resource availability to ensure organizational goals and objectives are met; Managing conflicts and shortfalls with steps for resolution; Allocating infrastructure resources and services to projects; Controlling multi-project infrastructure management communications to effectively allocate resources across the organization; Identifying potential future or existing conflict issues and problems with recommendations for resolution, developing organisational competence and/or associated tools in this area
Identifying Skills	e.g. Identifying skills in a "skills inventory"; Reviewing current and anticipated projects to determine skills needed across the project portfolio; Evaluating skills needs against available people with the prerequisite skills to determine if training or hiring is required
Developing Skills	e.g. Obtaining (or developing) and delivering training to close identified gaps of project personnel; Identifying assignments that lead towards career progression
Acquiring and providing skills	e.g. Providing human resources to support all projects; Training or hiring qualified personnel when gaps indicate skill needs cannot be met with existing personnel); Maintaining communication across projects to manage resources effectively across the organization; Identifying current or potential future conflicts and make recommendations; Scheduling other assets as required; developing organisational competence and/or associated tools in this area
Planning Quality Management	e.g. Identifying, assessing and prioritizing quality guidelines consistent with the organization strategic plan; Establishing QM guidelines -policies, standards and procedures; Establishing organization and project QM goals and objectives-policies, standards and procedures; Establishing organization and project QM responsibilities and authorities
Assessing Quality Management	e.g. Evaluating project assessments; Assessing Customer satisfaction against compliance with requirements and objectives; Continually improving the QM guidelines
Performing quality management corrective action and preventative action	e.g. Recommending appropriate action, when indicated; Maintaining open communications -within the organization and with stakeholders; developing organisational competence and/or associated tools in this area
Planning Knowledge Management	e.g. establishing a strategy to capture "right" level of knowledge; Establishing scope of KM strategy - Helping projects to identify what to capture; Establishing which projects will be subject to this process
Sharing Knowledge and skills throughout the organisation	e.g. Capturing, maintaining and sharing per the strategy; Establishing infrastructure mechanisms to identify and access assets

Key SE Activities (as defined in the INCOSE SE Handbook, V4)	Example tasks (derived from the INCOSE SE Handbook)
Managing knowledge, skills and knowledge assets	e.g. As domain/product changes, ensuring assets are revised or replaced with latest information; Assessing and tracking where knowledge assets are used, applied or where they are applicable; Determining whether knowledge assets reflect advances in technology and evolve as necessary; developing organisational competence and/or associated tools in this area
Defining and authorising SE projects	e.g. Identifying, assessing and prioritizing investment opportunities; Establishing business area plans (based upon strategic objectives); Establishing Project Scope and expected outcomes and SE/PM accountabilities and authorities; Establishing the domain area of product lines as defined by features and variability; Allocating adequate funding & resource; Identifying interfaces and opportunities for synergies across projects, developing organisational competence and/or associated tools in this area
Evaluating the portfolio of SE projects	e.g. Evaluating ongoing projects to provide rationale for continuation, redirection or termination
Terminating SE projects	e.g. Closing, cancelling or suspending SE projects that are complete or designated for termination

15. Other

Other functions that you have performed and can justify as system engineering.

If you choose to document part of your experience using this category, please ensure the claimed experience relates to systems engineering. You will also have to justify why you believe this "other" experience should be counted as "systems engineering" experience and why it does not fit in into any of the "standard" categories.